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ABSTRACT

Developed to aid agencies assisting the economically disadvantaged, unemployed, or underemployed in selecting good career information and the most useful career/occupational information systems, these guidelines present basic background on and criteria for evaluating career information and the systems which deliver the information. Preliminary topics discussed include the importance of career choice, need for quality career information to make that choice, and types of career information needed. Information types and formats, methods of information storage and retrieval, and problems and innovations in storing and using information are then discussed. The next two sections, the focus of the document, provide information on and suggest criteria for evaluating and selecting career information material and a career information system. These criteria for evaluating material are listed: what, why, who, when, where, how it was gathered, and how it is presented. Guidelines for selecting materials suggest that materials must be accurate, representative, attractive, keyed to client interests and abilities, and cost effective. Career information system evaluation and selection is discussed in terms of its components--information, delivery, and user services--and examination of the organization sponsoring and/or marketing the system. A final section discusses steps in implementing/organizing a system, including needs of potential user agencies and organizations, inventorying existing resources, and acquiring financial assistance. (YLB)

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CAREER INFORMATION SYSTEMS: Guidelines and Considerations for Agencies Assisting the Economically Disadvantaged, Unemployed or Underemployed.

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CAREER INFORMATION SYSTEMS:

Guidelines and Considerations for Agencies Assisting the Economically Disadvantaged, Unemployed or Underemployed.

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Revised 1980 by: Roger Lambert, President, A.C.S.C.I.
Original edition written by: John Hartz, Wisconsin Vocational Studies Center and edited by James Spensley, Minnesota Occupational Information System, Bruce McKinlay, Oregon Career Information System, and Roger Lambert, Wisconsin Career Information System.

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CAREER INFORMATION SYSTEMS:

Guidelines and Considerations for Agencies Assisting the Economically Disadvantaged, Unemployed or Underemployed.

INTRODUCTION

If assistance to economically disadvantaged, unemployed and underemployed people is to be effective and long-term, they must receive training and work experience consistent with their interests, experiences and goals. If placed in programs in a haphazard fashion, people are denied a fundamental right--the right to choose their occupation. Obviously, for many, circumstances militate against freedom in choosing an occupation. Counseling resources are limited, and many such people have personal limitations which restrict the occupations from which they can choose. Nevertheless, they have the right to choose from among the alternatives available. To maximize career choice, people need some basic understanding about themselves and work, knowledge of the various alternatives available, and the freedom and information to decide among and pursue alternatives.

Assisting people with career choices is a complex task. A key element is good career information. Individuals making decisions regarding employment and training must have basic job market information. People cannot effectively choose what they do not know. Good career information systems can provide the vital information necessary to exercise the right to choose.

Career information, particularly if made available through a career information system, can be used directly or it can be used by counseling staff. When the information is made available through a career information system, participants can either use the information to explore career or training alternatives or to gain specific information needed to make a career decision. Staff can use a career information system to assist individuals with particular needs. They can use it to help those with inappropriate choices explore other alternatives, those with tentative choices decide, and those undecided to explore and choose. A career information system can also be used in assisting clients select appropriate training experiences.

Career information, particularly a career information system, can: (a) maximize choice within the confines of the situation; (b) improve the matching of clients to service offerings, thus assuring better use of scare resources; (c) reduce the time needed by staff to provide effective career counseling by providing them with near instant access to vital information; and (d) data in the system can be used conjunctively with other information to improve crucial management functions. While agency limitations may not allow optimum training and placement choice among all the occupations possible for any individual client, those participants possessing information on job opportunities, requirements and benefits are more likely to perceive the relevance of training and work experiences offered than they would if they did not have the information.

Purpose

These guidelines have been developed for use by CETA Prime Sponsors, Job Service Offices, social service agencies, and others interested in career planning information. They present basic background on career information and career information systems. Criteria for evaluating career information and the systems which deliver the information are provided. A careful reading of this document should assist interested agencies in selecting good career information and the most useful career/occupational information systems.

Many agencies report that the use of a "good" career information system enhances their entire program. Counselors are spared from supervising "browsers" or assisting in basic information retrievals. Clients are stimulated by successes in discovering information and new information leads to meaningful comments and questions in counseling sessions.

Some of this "bonus" effect may be attributable to the attractiveness of the information system or media, or to agency attitudes and procedures that empower the clients to act for themselves. This does not excuse careless or uncaring selecting of resources.

Smaller agencies cannot employ researchers or information specialists and larger agencies likely prefer hiring additional counseling staff instead if there is a choice.

The authors attempt to provide insight and assistance concerning the problems of information "quality". The questions raised remind users of the needs of the disadvantaged and unemployed (for applicable and appropriate career information). It cites problems, pitfalls and weaknesses and how to spot them. It provides good examples and bad examples, and "rules of thumb" for recognizing the difference.

Someone in an agency ordinarily has the problem: "What do we do for (quality) information?" This paper is for that someone.

Career Information and Career Information Systems

There are significant differences between career information and career information systems. Career information is any information related to occupations or careers. It can be found in any variety of media ranging from pamphlets to audiovisual materials. On the other hand, a career information system consists of more than an amalgam of diverse information on the world of work. A system consists of coordinated and interrelated parts. The best of such systems have at least three components: (a) an information component; (b) a delivery component; and (c) a user service component. A good system is built on good information--accurate, comprehensive and specific to the locale. A good system delivers the information in a manner

that encourages use by individuals. It provides information to a variety of users. And, a good system provides training for those who will use it so its use can be integrated into the overall mission of the organization.

A career information system relates education, training, and other career information to information about specific occupations. It is conceptually different from a "job system" which is designed to match prospective applicants to specific job openings.

While these traditional distinctions between job, occupation and career will be kept throughout this document, it is important to be aware that frequently the terms elsewhere are used interchangeably. Therefore, it is important to look at system's content to determine its focus. A very important illustration of this point pertains to the development of the National Occupational Information Coordinating Committee (NOICC) and the State Occupational Information Coordinating Committees (SOICC's) authorized under CETA and Vocational Education legislation. The NOICC-SOICC Occupational Information System (OIS) includes career, occupational, labor market, and placement information for the entire spectrum of users; direct participants in the labor market; labor market intermediaries such as counselors, placement persons, teachers; and, planners, statisticians or program administrators. Their "OIS" is a generic term which encompasses all data collection, reporting and use for manpower planning.

THE IMPORTANCE OF CAREER CHOICE

There are many reasons why career choices are crucial and why good career information is essential to these choices. This is particularly true for younger people. Their early choices frequently determine their life career patterns.

Career choices are important on both a personal and a societal level. On a personal level career choices impact on a person's entire life. They impact on where and how a person lives, what that person's non-job pursuits and leisure activities are, and how he or she is perceived by others. More importantly, career decisions influence self-perceptions, attitudes, values and beliefs. Specific choices also have an impact on employment status. The person who chooses an occupation where employment is known to be consistent and stable increases the probability of having work when others do not. Occupational choice may also impact on success or failure. Since people differ in their capabilities, those selecting occupations which maximize utilization of strengths will probably experience a greater degree of success than those who select occupations which make heavy demands upon personal weaknesses. For young people the choice often times is difficult since they do not have experiences to draw upon which help identify their strengths and weaknesses. Occupational choices also frequently determine whether or not people will enjoy their work. There are many who believe that an occupation must provide for particular personal and emotional needs. If this does not in fact occur. frequently unhappiness or discontent may result.

On a societal level the aggregate choices people make determine where manpower shortages and surpluses occur. When too many people prepare for occupations which are currently overcrowded, human resources are wasted. Conversely, when too few people select occupations where there are labor shortages, some basic societal needs may not be fulfilled. Preparation for an occupation is expensive and, for the most part, publically financed.

In many instances CETA applicants are those who have made inappropriate choices. Frequently they are or were unaware of opportunities that either exist or existed at the time when they made choices. In a work oriented culture such as our own, the failure to "make it" in the world of work usually has a profound impact on all aspects of that person's life including their perception of self-worth.

CAREER CHOICE & CAREER INFORMATION

Career choices are not one-time events. People make choices, not a choice. Career development is integrally related to total life development. This is true regardless of theoretical orientation. People may believe that their career is the means of enacting their self concept or that a career is selected to meet felt or unfelt needs.

Effective career choices involve knowledge about self, knowledge about the world of work and skills in decision-making.

Ideally, for effective career choice a person should know:

(a) what s/he wants out of life;

(b) what s/he wants out of an occupation; and

(c) what s/he has to offer (or is willing to acquire) for what s/he wants.

For optimum effectiveness a person also should know:

(a) what occupations are available to fulfill what is wanted;

(b) what these occupations require; and

(c) what these occupations offer.

This knowledge of self and the world of work must be coupled with sound decision-making skills which enable the weighing of pros and cons and allow for compromise. In addition to the above, there is need to know how to implement the choices made; that is, how to effectively locate job opportunities and how to get a job once located.

Extension information is required to enact the process described above. The amount of good information the decision-maker has must thus effect the quality of the decision to be made. However, with or without good information people make choices. Research indicates that good information can enhance the choice process, and can lead to greater satisfaction with the career choices made. However, people cannot choose what they do not know.

Obviously, good information by itself is not enough. It must be coupled with knowledge and acceptance of personal strengths and limitations as well as clear thinking about the relative merits and significance of the facts. Knowledge of career information cannot be effectively applied without corresponding knowledge about self. Equally obvious, knowledge of self can only be effectively applied to career choice when something about career information is known.

Career information is particularly crucial for young people. Young people have need of some career information for both exploratory and decision-making purposes. Those youth remaining in school need information to effectively select both careers and training in preparation for those careers. Potential dropouts need information to assist them in becoming aware of the alternatives that remain open to them. Minority and disadvantaged youth in areas of high unemployment need career information to become aware of multiple opportunities elsewhere. The handicapped need information to become aware of the full range of opportunities open to them.

Making career information available to youth through a variety of organizations ar a variety of locales may have a positive impact in their overall career development. Without this information it is not likely that the career patterns of youth, particularly those in the special populations, will differ significantly from those of the role models in their locale.

This guide does not purport or imply that good career information alone will guarantee healthy career development or effective career decision-making. Neither does it purport that a good information system can substitute for effective career counseling or guidance. Most people need professional assistance in both learning to better understand themselves and learning effective decision-making skills. These are vital to sound career decision-making. These are the crucial dimensions counselors, and not machines, can provide.

Good career guidance and counseling, like good career decision-making, requires good career information. The newest Dictionary of Occupational Titles lists 20,000 separate titles. Regardless of the number of occupations counselors explore with their clients, adequate personal knowledge of all the vital details of these occupations is beyond any one counselor's personal grasp. Consequently, if adequate career counseling is to be provided, career information systems are needed to augment the counselor's services.

CAREER/OCCUPATIONAL INFORMATION PEOPLE NEED

People have different needs for occupational and career information. Some people need much information, some people track into a career goal very early, others have no idea what they are capable of doing nor how to go about exploring possibilities. The person not knowing what is wanted out of life needs different information than the person who does. Just as obviously, people have different needs for assistance in internalizing the information they receive. Nevertheless, many people have common information needs.

Generally, people need to have basic information on:

(a) the range of jobs open to them;

(b) where and how to obtain information about occupations; and

(c) how to find the job of their choice.

Research indicates that few people are aware of the extensive range of occupations open to them. Likewise, few know where to obtain good information or how to appraise its accuracy and worth. Many more are unaware of the multitude of factors which should be considered in making an occupational choice. And, few are knowledgeable about good job-seeking and getting skills.

This general lack of knowledge about vital occupational information is true for the population in general--the disadvantaged as well as those people not coming from disadvantaged backgrounds, or suffering from unemployment. This is especially true of all youth since they have had little opportunity to gain experience from the world of work. The CETA applicant population is generally economically disadvantaged, and suffers from unemployment or underemployment, or are youth about to enter the labor market. Thus, it is highly unlikely that many CETA applicants, young or old, possess even the limited knowledge of the occupational world held by their more advantaged non-CETA counterparts. For adults, this lack of knowledge about alternatives, openings and employability skills probably is an important factor in their failure to obtain adequate employment. For youth, this lack of knowledge may prevent them from achieving what they otherwise might.

The needs and benefits of information for youth and adults has been well documented. For example, Parnes has found that the extent of a person's information about the world of work is positively linked to measures of success in the labor force.[1] Moreover, a recent school dropout study in Wisconsin reveals that a majority of the dropouts said they left school because they could see no relationship between school and future work. While career information cannot in itself make up for deficiencies in school programming, it can realistically convey world of work information both to young people and to school planners and teachers so that they can better relate education to work. Consequently, career information can benefit students directly and individually as well as indirectly. With adults, career information can assist them in becoming aware of alternatives that they might not otherwise see.

While youth and adults have information needs in common, their needs generally differ as well. Beginning during their early teens, young people are in need of general information regarding occupations for the purpose of exploring alternatives. This information should describe the occupations, show interrelationships among occupations, and detail the training prerequisites for entry. This exploration period should encompass several years. Once young people have completed the exploratory stage and are at the point of making a definitive choice, their information needs parallel those of adults. At these times, they, like adults, need specific information on all facets of the occupations.

Good career information, particularly good career information systems, can meet the diverse and common needs of both youth and adults. However, to do so, the following kinds and types of information must be provided:

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[1] Parnes, H.S. and Kohen, A.E. Career Thresholds: A Longitudinal Study of the Educational and Labor Market Experiences of Young Men, 1-6, R & D Monograph 16, U.S. Department of Labor, Employment and Training Administration, 1977.

1. Descriptive Information About the Occupation

   a. A description of duties or tasks (nature of the work).

   b. A description of special tools, equipment, or instruments used on the job.

   c. Identification of other occupations that have similar skill or knowledge requirements (skill transferability). Information on related occupations or job families.

   d. Opportunities for promotion or career advancement (career ladders or lattices). Information on hiring channels (how the job or occupation can be obtained).

   e. Working conditions (e.g., indoors or outdoors, work week and schedules, and working conditions such as stress, physical settings, safety, etc). Information on the work environment that is related to the occupation (e.g., kind of supervision or people in the work situation, organization structure, etc.).

2. Requirements of the Occupation

   a. Personal requirements: Interests, aptitudes, abilities, and physical qualities that can be related to characteristics of the occupation (e.g., requirements for lifting, working with detail, ability to see results of work, etc.).

   b. Preparation requirements:

      1) general education

      2) school subjects or courses of study

      3) special training or education

      4) work experience

   c. Other requirements:

      1) licensing or certification information

      2) information on associations or unions

      3) information on examinations that may be required

      4) information on special requirements such as citizenship, language, etc.

3. Economic Information About the Occupation

   a. The number of workers in the occupation and related data--industry employment, geographic distribution, self-employment, etc.

   b. Descriptive outlook information, including projections of demand, supply, relationship between supply and demand, and factors that affect outlook (technological, economic, or demographic). Information on major sources of supply (e.g., apprenticeships, on-the-job training, or specific kinds of training). Opportunities for certain groups (e.g., special hiring programs for minorities, training program graduates, etc.).

c. Information and data on earnings (beginning earnings, average earnings, and ranges).

d. Information on fringe benefits (vacations, insurance, etc.).

e. Information on costs to workers (union membership, tools and equipment, etc.).

4. Related Information About the Occupation

a. Information on education and training locations.

b. Information on financial aid and assistance.

c. Information on conducting a job search.

d. Information specific to the needs of special populations (disadvantaged, handicapped, minorities and women).

INFORMATION TYPES & FORMATS

Career information is extensively available today in a variety of types and formats. The formats range from the printed page to audiovisual materials such as video cassettes, films, filmstrips, records and audiotapes. The National Vocational Guidance Association has developed a system for classifying the various types of occupational information. These include: (1) Career Fiction; (2) Biography; (3) Single Job Information; (4) Job Family Information; (5) Jobs in Specific Business, Industry, or Services; (6) Recruitment Literature; (7) Orientation---World of Work; (8) Special Groups; (9) Bibliography; (10) Directory; (11) Financial Assistance; and (12) Other Types. Each of these types is briefly described below.

Career Fiction. An occupational description portrayed through characters in a short story or novel.

Biography. Career information presented via biographical materials consists of the real life account of a person as he or she prepares for and advances in a specific career.

Single Job Information. Consists of information covering a single occupation. Usually it consists of an occupational "brief" of several pages which is presented for exploratory purposes.

Job Family Information. Consists of information on a field of work consisting of numerous related occupations such as "classroom science," etc.

Jobs in a Specific Business, Industry or Services. This consists of information on the occupations represented in a specific industry, business or service.

Recruitment Literature. This consists of information designed to recruit or attract people to a particular field or career.

Orientation--World of Work. This consists of information developed to assist people in making occupational choices.

Special Groups. This consists of information specially designed for specific groups such as the handicapped, disadvantaged or women.

Bibliographies. Consist of listings of books and materials dealing with career and occupational information.

Directory. Consist of lists of institutions offering education and training for occupations or careers.

Financial Assistance. These consist of sources of information on the provisions of financial assistance for career or occupational training or education.

Other Types of Publications. This includes other diverse occupational and career information including such things as posters, reports, charts, etc.

The great bulk of occupational information is provided in printed form regardless of the media in which it is presented. Some printed materials are provided on microfilm cards, others on computer cathode-ray terminals or printouts but most is presented in pamphlets or books. Regardless, most of the printed materials cover the same basic topics with the same primary objectives--to describe an occupation or group of occupations. What differs is the order in which items are presented and the emphasis on particular topics. Beyond the primary objective of description, objectives differ according to the producer. Some develop materials for profit, others for public relations and still others to recruit or attract top candidates to the field. These secondary purposes impact on the emphasis of topics presented.

In addition to printed materials, there is an increasing number of audiovisual sources of occupational information available. These include audio and videotapes, films and filmstrips. Like printed materials, audiovisual information generally covers the same topics and is produced for the same basic purposes. Access to these materials is available through commercial vendors as well as through publicly funded programs of career information.

There appears to be some evidence that it is important to have materials of several types and formats because of the varying interests and ability levels of young people. For example, audiovisual materials have been demonstrated to attract more interest on the part of those young people with poor reading skills. Similarly, the interactive nature of computerized information systems with their content and search flexibility appears to stimulate use particularly during the exploratory process.

Specific listings of a variety of career materials can be obtained from:

(1) State Departments of Education,

(2) Job Service Offices,

(3) Vocational Rehabilitation Offices,

(4) National Book and Educational Material Vendors,

(5) Professional Education Associations, both state and national, (e.g., American Personnel Guidance Association - APGA; American Vocational Association - AVA; National Career Education Association),

(6) Labor Unions and Business Associations (e.g., AFL-CIO, National Alliance of Business),

(7) Existing career and occupational information systems.

INFORMATION STORAGE & RETRIEVAL

The method of information storage directly effects usage. How materials are stored determines how they will be accessed. Materials can be stored or filed in a number of ways: (a) alphabetically; (b) by subject; (c) by interest; (d) by industry; (e) by employer (f) according to geography; (g) by a code or numerical system; or (h) by any combination of the above.

Each of the above methods has both strengths and weaknesses. There is an axiom that the more complicated the system, the more likely it will require staff to assist others in its use. Yet simple filing systems present other problems. For example, an alphabetical system is simple and readily expandable, however, it does not allow for the grouping of related occupations. Moreover, an alphabetical system may become unwieldly once it is expanded and require numerous subdivisions with occupations.

Those deciding on developing their own filing system or adapting one of the coded or numerical systems should review the pros and cons of the different methods. These can be found in any text on the Information Service (see bibliography).

Regardless of what filing, access, and retrieval system or systems adapted or purchased, it should at least: (a) be easy to use; (b) be expandable; (c) be adaptable; and (d) allow for ready access to related occupations, employers and industries.

As an alternative to developing filing and access procedures, potential users should consider the feasibility of purchasing an existing system. Most systems have a variety of built-in access strategies and offer other advantages which frequently offset higher costs.

PROBLEMS & INNOVATIONS IN STORING & USING INFORMATION

With changes occurring in the marketplace at an accelerating pace, an up-to-date picture of the world of work is difficult to obtain. The almost daily advent of new occupations and the elimination of old ones creates special problems in keeping a traditional library of books and pamphlets on the occupational world current. The time required to develop, print and distribute printed documents often results in their being outdated before they are available for widespread use. Moreover, the sheer magnitude of information which is pertinent to career exploration and choice has reached such proportions that normal printing and storage is becoming less and less feasible. In addition, printed pamphlets and books must be distributed widely to be cost feasible. This means that the information these contain must be national in scope at a time when much of the most pertinent data needed by individuals is specific to the locale. The above facts coupled with the fact that current generations are becoming less oriented to printed media has led to considerable efforts to provide alternative career information delivery systems.

These delivery systems attempt to solve the problems cited above by utilizing modern technological innovations. Norris, Zeran and Hatch classify these technological innovations into two groups: (a) computer technology; and (b) multimedia techniques. The multimedia techniques include those they refer to as "gaming" and those they refer to as "Mechanical Devices." Gaming includes simulation, role playing, etc. as a means primarily of motivating people to consider their career development and explore alternatives. Mechanical devices include such things as sound filmstrip series, microfilm cards with readers, and needle sort systems. Most of the mechanical systems have been designed to promote either systematic exploration or decision-making. Those interested in previewing either the gaming techniques or mechanical devices can usually obtain sample materials from commercial publishers or from guidance and career education consultants with the state educational agency. Many state educational agencies produce a microfilm needle sort or other mechanical system for distribution to state schools.

Computer technology provides the most viable technological alternative to libraries of books and pamphlets. The computer can provide: (a) almost unlimited storage of information; (b) multiple access strategies; and (c) near immediate access to information. In addition, computer technology allows for interactive use by clientele thus making the exploration process potentially appealing. Computer memory banks also allow for easy modification and updating. This holds the potential for increasing the accuracy of information available to users.

Those agencies which either have or might obtain funding should seriously consider the purchase of a mechanized or computerized system. The cost can be offset by the advantages such systems provide both staff and clientele. However, since systems differ in merit as well as cost, those considering purchasing or adapting should closely evaluate all components of various systems.

Existing career information systems abound under the auspices of a variety of agencies both public and private. Commercial vendors have developed a large quantity of career information materials, some of which have been organized into what they call systems. Other commerical vendors have developed career information systems which catalog and retrieve information. Publicly funded programs for career and occupationally related information have developed in a number of ways. Currently nine states have received Dept. of Labor support for comprehensive career information systems. At the same time, the Dept. of Labor has funded the development of more specialized systems, some of which are known as Job Match and Job Search. In the public domain, federal funding has produced a number of incentives for career information. Legislation providing for CETA, YEDPA, Career Education Incentive Act, Educational Information Centers, Vocational Education and NOICC-SOICC's has produced a number of programs.

While turfmanship and competition in the private vendor domain is to be expected, it is equally existent in the public domain where various programs operators are only cognizant of their system. On the other hand, there are also many cooperative working arrangements between private and publicly funded programs as well as consortiums of publicly funded programs. In most instances, these cooperative ventures have proved to be successful and beneficial to all

participants. Consequently, various kinds of cooperative arrangements should be explored before arbitrarily choosing or eliminating a career information component or system on the basis of who owns it.

EVALUATING AND SELECTING CAREER INFORMATION MATERIAL

While there is an abundance of career information available, much of it is obsolete, inaccurate or biased. Consequently, before information is provided to those requiring it, it should be evaluated both for quality and appropriateness for the clientele with which it will be used. Much of the career information available has been evaluated by committees of the National Vocational Guidance Association. These committees evaluate the materials according to both type and format. To assist these committees, as well as others who seek to prepare or evaluate career information, the NVGA has developed Guidelines for the Preparation and Evaluation of Career Information. These guidelines establish specific criteria for producing or evaluating the content, style and format of each type of information. Potential users of career information should become familiar with these guidelines.

Potential users of materials should initially pre-screen and evaluate materials for themselves. Materials that pass pre-screening should then be further checked by consulting the NVGA Bibliography of Current Career Information. This bibliography contains the NVGA committee ratings of each type of information. This bibliography is published every two years and is augmented in the interim by ratings published in the Vocational Guidance Quarterly. In rating the materials each is classified as either: (1) highly recommended; (2) recommended; (3) useful; or (4) not recommended.

Criteria for evaluating career information material

To initially screen materials potential users should ask some very basic questions:

(1) What information is presented?

(2) Why was it produced?

(3) Who produced the information?

(4) When was it produced?

(5) Where was the data obtained?

(6) How was the information gathered?

(7) How is the information presented?

What? The "what" of production involved basic issues regarding the content of the information. Career and occupational information can be used for basically two purposes--exploration and decision-making. Information materials designed to promote exploration need not be as detailed or as specific as those needed by the person deciding on a job or training program. Nevertheless, both types should contain information on each of the following topics: (a) the nature of the occupation; (b) the work performed; (c) the work setting;

(d) potential personal rewards; (e) entry requirements; (f) advancement possibilities; (g) outlook for future; (h) related occupation; (i) licensing or membership requirements; and (j) personal qualifications needed for success.

Why? The "why" of production deals with the purpose of the information. Some information is developed for recruitment or entertainment, while other information is written to present relevant facts as accurately as possible. If the materials were developed with even the secondary purposes of public relations or recruitment, those pre-screening the information should check it out further to make sure that it presents a well balanced and unbiased picture of the occupation.

Who? The work of scholars is likely to be more complete and to provide more accurate information than, for example, the U.S. Army which may be biased toward recruiting members. The production of occupational information is demanding work requiring specialists. Materials not indicating sponsors and qualifications of those doing the research should be rejected.

When? "When" is a very important question. Technology can quickly and drastically change the marketplace and worker skill requirements. Referring people to outdated information could have undesirable consequences. Consequently, all materials should have the date of publication given. Much material that is in pamphlet or book form is already three years old by the time it is published. Materials with a publication date more than two years prior should be either rejected or crosschecked for changes in the occupational requirements.

Where? Where the research was done and data gathered are also important. Much so-called national information is based on research done only in several metropolitan areas. Such information may be highly misleading to rural clientele. It is important to make sure that if the information is claimed to be national in scope that the research on which it was based was national.

How was it produced? How the information was developed, compiled and collected is also important in determining its accuracy. The methods used in garnering the data should be provided. The materials should be authenticated either by recognized experts or by obviously appropriate research studies.

How is it presented? Of equal importance is the way in which the material is presented. If the information is reading material and is to be used for exploratory purposes, the appropriateness of the reading level must be determined. Research has indicated that the great bulk of printed occupational information is written at reading levels above those of the clientele for whom the material is intended. Thus, at least one of the reviewers should be able to utilize a "reading-ease" formula to assure that the materials selected are appropriate to the reading level of clientele who will use it. The information should also be interesting in form. If it is dull and drab it is not likely to be used. It should also be free from sex, racial and white-collar bias.

Those working with young people should be particularly cognizant of the critical nature of the who, what, where, why and how questions. Young people do not have the experience base from which to individually evaluate materials as they use them. Being at an impressionable point in their lives may lead many of the young users to build false expectations from biased or recruitment

materials. To paraphrase a statement Robert Hoppock once made, "sending a young person to explore unevaluated career materials is like sending that person to a drugstore to fill his or her own prescription."

The need to evaluate materials before having young people use them does not mean that they should be excluded from the screening and evaluation process. A panel of young people from diverse backgrounds with differing interests could be trained in evaluation techniques. This might help assure the selection of materials which attract use as well as provide those involved with a more in-depth knowledge about the complexity of the world of work.

Criteria for Selecting Materials

Once materials are evaluated, the next step is selection. The agency can select either a diverse combination of materials or a single source of materials. Criteria for selection are contingent upon the goals, needs, interests, & budget of the agency. Each of these should be considered in light of the population to be served. Consequently, the following criteria for selection are offered only as a general guideline.

The materials selected should be:

(a) accurate;

(b) representative;

(c) attractive;

(d) keyed to the interests and abilities of clientele; and

(e) cost effective.

Accurate The major criterion in selecting materials is accuracy. Regardless of how attractive or inexpensive materials may be they should not be used if they are not accurate. Unfortunately, good career information is not easy to come by. Just as unfortunately, poor career information is abundant. Much of the available career information is biased, based upon poor research, and outdated. Printed career information, even when based upon the latest research, is usually at best three years old by the time it is available for acquisition or purchase.

Frequently those not knowledgeable about the pitfalls of available information are reluctant to purchase information systems because much career information is provided free of cost. Also, most free career information is not free from bias. Much of it is developed for recruitment or purposes other than providing the best information possible.

Representative Regardless of the scope of a school's or agency's services, the materials selected should include representative groups of occupations. These should cover the most common occupations in the world of work, current entry fields, and the fields of work in the locale and region where the agency or school is located. Particular emphasis should be given to assure a balance between entry level occupations for youth as well as occupations requiring advanced education or experience.

Attractive Appearance, particularly of reading materials, is an important factor in encouraging use by clientele. Materials that are drab, overly technical or scholarly are unlikely to be widely used. Consequently, illustrations, covers, writing style, size of print and so on should be considered when selecting materials. For youth, the materials should appeal to and identify with that age group.

Keyed to Interests and Abilities of Clientele If materials are to be used with youth for exploratory purposes, it is important that information is included on those occupations which interest the clientele. Including such materials will assist in attracting use even if the "interesting" occupations are not feasible for most of the clientele. Of equal importance in assuring use is the suitability of materials to the ability levels of the clientele. If they can't read it, they are unlikely to use it. Therefore, those selecting materials should have a clear conception of both the interests and reading levels of clientele.

Cost Effective For most agencies, cost must be a consideration in selecting materials. However, cost alone should not be the deciding issue. A wealth of pamphlets and booklets can be obtained at little or no cost. Therefore, cost should be weighed against effectiveness. The dollar cost of a more expensive material may be offset by savings in staff time. Likewise, the ease of accessing information from more costly materials may assure much wider use by clientele.

EVALUATING AND SELECTING A CAREER INFORMATION SYSTEM

As mentioned previously, career information systems are more than an amalgam of diverse information on the world of work. These systems can be mechanized, computerized, exclusively books and pamphlets, or any combination of these. Regardless, systems consist of coordinated and interrelated parts. Good systems have at least three components: (a) information; (b) delivery; & (c) user services.

Below, each of these components is briefly discussed. Additionally, information is presented on system organization and on limitations of systems. Presented with the discussion are points which those interested in selecting an information system should consider on evaluating the merits of the system.

Information Component

Some systems deliver information in a very sophisticated manner. However, regardless of the sophistication of delivery, an information system is only as good as the information it delivers. Obsolete or misleading information attractively delivered may do more harm than good. Consequently, the first thing a potential user of a system should do when considering adoption or purchase is evaluate the information the system delivers. In evaluating the information, potential users should employ the same guidelines (see above) they would use if evaluating any career materials. When evaluating information in a system, potential users should take extreme care because it is much less easy and much more costly to change a system than a book or pamphlet. When evaluating the information component of any career information system it is important to involve the potential users in the evaluation. If youth are to be a primary target group, then the information component of any system should be evaluated by involving youth in the process.

Delivery Component

A good delivery component, whether computerized or not, provides more than availability for use. It must also attract use, be easily operable, be adaptable for various uses and be consistently dependable in operation. Likewise the potential user population should be involved in the evaluation of the delivery system. For example, if disadvantaged youth are a major audience and a test run on the system shows it to be complicated or unattractive to them, an alternative system should be considered. In essence then, a good delivery system is:

(a) accessible

(b) attractive

(c) user operable

(d) adaptable

(e) reliable.

Accessible Accessibility refers to appropriate availability. To rate high on accessibility a system should:

(a) enable users to use it throughout the day,

(b) be useable and available both before and after regular hours,

(c) be capable of being centrally located,

(d) provide for confidential and non-conspicuous use.

Attractive Attractiveness refers to the appeal of the system. Attractiveness is particularly important for promoting career exploration. Also, the attractiveness of a system greatly affects the attention span of the user. A system that is attractive to young persons will be much more likely to hold their attention for a longer time. This is especially important when working with students of low motivation or interest since their attention span is often short and their concentration is easily diverted. To rate high on attractiveness the delivery system should:

(a) be aesthetically appealing,

(b) deliver information at a level appropriate to the clientele,

(c) delivery information in an interesting style with visually appealing print, illustrations and charts. Printing should be legible and easy to read.

User Operable User operability refers to the ease with which the system can be used by those who have need of the information. To rate high on user operability, a system should:

(a) enable users of varying abilities to have access to desirable information without assistance,

(b) provide instructions for use which are easily understandable by users of varying abilities,

(c) provide structured access procedures which promote users' understanding of key occupational and labor market information,

(d) permit the user to gain direct access to desired specific information without being required to proceed through structured access procedures,

(e) permit the user access to any information in the system.

Adaptable Adaptability refers to the capability and ease with which the system can be modified for effective use both in a variety of locales and with users having different needs. To rate high in adaptability a system should:

(a) employ more than one medium to deliver desired information,

(b) provide the means for integrating the information with interests, values, and abilities,

(c) permit use both for career exploration as well as for career decision-making,

(d) provide interesting legible summary copies for future reference by users,

(e) be expandable & have the capability of being easily updated,

(f) be capable of being tailored to local needs.

Reliable Reliability refers to the dependability of the system. To be rated high in reliability a system should:

(a) have a demonstrable record of consistent operation,

(b) use standard equipment widely available,

(c) tolerate hard use,

(d) if an electronic system, have a backup system to be used during "down time" or updating,

(e) not require extensive periods of time for modifications or updating,

(f) if mechanical or electronic, have staff available to assist in solving the system's problems,

(g) have repair parts readily and easily available.

User Services Component

User services are the support services provided to users by the organization or agency which has developed or markets career information in a systematic manner. User services are vital for a number of reasons. First, most systems can be used in a variety of ways either directly by those needing the information or by those having responsibility for assisting others achieve career independence. Without training in how to use the system it is unlikely that it will be used to its full capability. Additionally, many counselors and staff have not had pre-service training in appropriate use of career information with their clientele. Inappropriate use by them may negate much of the potential benefits young people can derive from a good information system. Consequently, at least some of the staff at most agencies or schools need assistance in learning how to use career information effectively in helping individuals experiencing problems.

User services staff, even of a good system, cannot be expected to provide agency staff with in-depth training in the use of career information. However, a good user services staff at a minimum should provide:

(a) staff training in use of the system,

(b) consultation on effective ways to utilize career information in the organization,

(c) orientation to the weaknesses and limitations in the system as well as strengths and benefits,

(d) orientation to the kinds and amount of information youth and adults can effectively absorb in work sessions with a career information system,

(e) ongoing consultation and surveying of staff and users to determine information needs,

(f) consultation with staff prior to program modifications or updating,

(g) ongoing in-service to staff as modifications and updates are made.

Organization & Sponsorship

In addition to evaluating the user services provided, those interested in implementing or utilizing the service of information systems should examine the organization sponsoring and/or marketing the system. A fundamental point to consider is the purpose for which the organization is in the business of providing or selling career information.

Since it is costly to develop or adopt a career information system, particularly if computerized, the stability or potential stability of the organization as well as ongoing or projected efforts to improve the system and reduce costs should be examined. Questions to ask regarding the organization include:

(a) How is or will the organization be structured?

The organization should include representatives of both producers and users of career information. If it does not it is important to find out why not.

(b) Where is or will the management of the system located?

If users are to receive optimal service as well as impact on policies, the management of the organization should be within the geographical region served.

(c) Does or will the system have a manager or director?

The system should have a qualified director to provide leadership to the system and liaison with member organizations and other agencies.

(d) How is or will the system be governed?

The organization whould have by-laws and formal agreements with participating agencies.

(e) Does or will the sponsoring organization engage in inter-agency cooperation to maximize quality and minimize cost?

Cost can be reduced through multiple agency use. Thus, it is important that the organization is making ongoing efforts to solicit inter-agency use and cooperation.

(f) How is or will the sponsoring organization funded?

Some systems are provided with funding through grants during the initial periods of development. It is important to know how long outside fudning will be provided, how costs will be affected once funding has ceased, and when state and local funding arrangements will be developed.

(g) How long has the sponsoring organization been in existence? Is the organization stable? If new, how likely is the organization to be stable?

The length of time an organization has been in effect is some measure of its stability. It is crucial to determine whether or not the system has a high probability of continuing before investing scarce monies and staff time.

(h) Does or will the organization have a broad base of diverse users?

A broad base of diverse users will help assure continuation of the system. Diverse users can more readily exert political pressure to continue public funded systems.

(i) What is or will be the cost of the system per site? per user? Is there a probability that this will increase or decrease in the future?

Cost per user relates directly to funding sources, the ongoing efforts of the organization to obtain inter-agency cooperation, and the growth pattern of the system. With computerized systems, cost per user should decrease as the user population grows unless support funding is withdrawn.

Since computerized systems are infinitely more capable of delivering comprehensive career information, a CETA prime sponsor, state educational agency, state rehabilitation agency or state Job Service office should consider the above points in relation to the potential for a coordinated effort among these agencies. The model for this, the nine career information systems currently funded by DOL, has been adopted by the National Occupational Information Coordinating Committee (NOICC) as the standard for future systems' development. The continuation of this program concept is a major activity of NOICC.

Limitations & Cautions

Regardless of how good the information in the system is relative to other information services, no body of career information is completely accurate. All information is generalized, it is based on averages derived from various job sites in various locales. Working conditions, wages, and so on vary from locale to locale, job to job, plant to plant. For example, on the whole, secretaries travel less than salesmen, but in some companies the converse may be true. Thus, some facts in information systems are only relative or normative facts. Other "facts" in information systems are not facts at all, but judgments or inferences made from other facts. For example, almost no research has been done to determine personality requirements for specific occupations. With current tools such research is difficult at best. Yet occupational information systems invariably cite particular personality traits as important for certain occupations. Systems which do not provide in-service for users and staff on the weaknesses as well as merits of the information component may foster misconceptions about the world of work and thus subsequently distort the choice process.

A final consideration in examining systems involves claims made by the system about the system. If the system professes to be a career guidance system, or if claims are made that it can fulfill the organization's total career development responsibilities, potential purchasers should be immediately skeptical. Most systems provide good information and excellent access strategies for those desiring to narrow down career choices. Most systems are weak when it comes to promoting career exploration, or expanding the career awareness of users. In either case, more is needed than information itself. As stated previously, good career information is necessary but not sufficient for good career decision-making. Decision-making also requires skills in self assessment and the decision-making process. Assistance in these aspects of the choice process cannot be effectively provided by machines. The same holds true for career exploration. Staff mediation in using the system is usually necessary to assure that users employ the system to explore and not prematurely narrow their choices. This is especially critical when dealing with

youth since their experience base is small and their decision-making skills are untried. Staff involvement is essential to avert selection of over-simplified decisions vs. a more complicated decisioning process, i.e., a staff person may be able to use information to explain the more complicated concept of a career lattice vs. the student identification of a simple career ladder.

Examining various systems using the questions cited above should enable interested parties to select a system to fit their needs. However, if it is determined that purchase or adaption of an existing system does not fit the needs of the agency it may be possible to organize and implement a more appropriate system. Below is a brief presentation on some systems which meet the criteria cited above as well as some points to consider in organizing and implementing a new system.

IMPLEMENTING/ORGANIZING A SYSTEM

Since the early 1970's, the U.S. Department of Labor has funded the development of state-wide career information systems in nine states--Alabama, Colorado, Massachusetts, Michigan, Minnesota, Ohio, Oregon, Wisconsin and Washington. These systems compile, appraise, format and deliver information that is produced through the efforts of federal, state and local agencies. Thus, they deliver National and State and localized career information. In each consortium this information is updated on a regular basis.

These consortiums also are responsible for delivering the information to users through a variety of access and dissemination strategies. Access strategies include structured search processes that list occupations related to a variety of variables, interests, values, abilities and so on. Dissemination of information is provided through diverse media including at least computers and printed materials. Delivery standards include:

(a) independent user operability,

(b) accessibility--systems should be accessible throughout the agency's regular scheduled day, and

(c) varied media must be provided.

Cooperative policy-making boards govern each system. These boards include representatives from producers such as the state's employment service, the state's education system, local employer and labor groups, and users such as education, manpower training, and social service agencies.

Each consortium is required to provide services to agencies using the system. The user services staff of each system is required to provide training and trouble shooting for each user agency. They are also required to publicize the systems, negotiate contracts with user agencies and evaluate the delivery system components.

Agencies in states where consortium systems already exist should investigate the possibility of joining these systems. Agencies, especially state CETA organizations and prime sponsors, which are not located in states with a career information system, may be able to help establish a system in their state. The first step to complete in preparing to organize a system is to determine the needs of potential user agencies and organizations. Contacts should be made with the state employment service, the state department of

education, offices of higher education, the State Occupational Information Coordinating Committee, the State Educational Information Center, other Prime Sponsors, and state social service organizations such as vocational rehabilitation. In each case, the best contact person initially is usually the head of the agency. S/he can make references to others who can provide the specific data needed with respect to interest in inaugurating a statewide career information consortium. Gaining widespread cooperation is critical since the cost of a system for any single agency may be prohibitive. Multiple agency use can lead to a per user cost lower than that for much less useable information systems.

If cooperation seems possible, a second step involves inventorying existing resources. Critical resources include existing computer and other media networks as well as personnel already involved in either information development or dissemination. Inventorying resources also holds the potential for identifying additional support and user groups. For example, existing computer centers often have equipment which is under-utilized. Computer centers may see providing career information as a means of adding to services and thereby increasing cost efficiency.

If developing a system seems feasible, the next step involves acquiring financial assistance. At least a year of funding is needed at the onset to defray start-up costs as well as provide support during system establishment in user sites. Once established, user fees can be assessed to support the system. Funds for initial development of information systems are potentially available from a variety of sources. Sources include, but are not limited to:

I. Comprehensive Employment and Training Act (CETA) Funds.

   a) State and local CETA prime sponsors

   b) Special governor's set asides and discretionary funds.

II. Education Funds

   a) State and local education agencies

   b) Federal Education funds

      1) Administered through the State vocational education agency.
      2) Career Education office -- funding is available at the State or National level.
      3) Elementary, secondary, and higher education funds

III. The Employment Service

IV. The National Occupational Information Coordinating Committee (NOICC) --discretionary funds and special grant program

NOICC - Career Information System Incentive Grants.

The National Occupational Information Coordinating Committee (NOICC) has officially adopted the Career Information System of the Department of Labor as the standard concept for encouraging the development and use of occupational information for career choice and job search purposes (the nine previously mentioned Department of Labor funded programs). In adopting this concept it is the intention of NOICC to continue to encourage the development of career information system consortiums in all states through a series of incentive grants which were made available in late-1979.

SOURCES OF ASSISTANCE

Those interested in either developing or adopting a computerized system would do well to contact others who have experience in computerized system organization and implementation.

A. The Association of Computer Based Systems for Career Information is a national consortium for accreditation, training and technical assistance to advance Computer Based Occupational and Education Information Systems for career exploration and planning. The association conducts a full range of activities ranging from technical assistance to publication development. Listed below are the officers and the various permanent committees of the organization. For further information or assistance, you may contact the appropriate individual listed below.

PRESIDENT
Roger H. Lambert
Wisconsin CIS
964 Educational Sciences Bldg.
1025 W. Johnson Street
Madison, WI 53706
(608) 263-2704

SECRETARY-TREASURER
Elton Chase
Washington OIS
Seminar Building
Evergreen State College
Olympia, WA 98505
(206) 866-6740

MEMBERSHIP
Thomas A. Welch
Massachusetts OIS
13 Mercer Road
Natick, MA 01760
(617) 237-2942

PUBLIC INFORMATION
Darcy Mellen-Sullivan
Wisconsin CIS
1078C Educational Sciences Bldg.
1025 West Johnson Street
Madison, WI 53706
(608) 263-4748

TECHNICAL ASSISTANCE & TRAINING
Pauline A. Parish
Colorado CIS
University of Colorado
Willard Administration Center
Boulder, CO 80309
(303) 492-8932

VICE-PRESIDENT
Deborah Lindberg
Ohio CIS
309 S. Fourth Street
Columbus, OH 43215
(614) 466-8987

CLEARINGHOUSE
Bruce McKinlay
Oregon CIS
247 Hendricks Hall
University of Oregon
Eugene, OR 97403
(503) 686-3872

MEMBERSHIP
Deborah E. Perlmutter
MetroGuide/NYC Board of Education
Room 711, 110 Livingston Street
Brooklyn, NY 11201
(212) 596-5850

RESEARCH
James Stubblefield
EUREKA California CIS
Diablo Valley College
Pleasant Hill, CA 94523
(415) 685-1230

TECHNICAL ASSISTANCE & TRAINING
Deborah A. Lindberg
Ohio CIS
309 S. Fourth Street
Columbus, OH 43215
(614) 466-8987

STANDARDS & ACCREDITATION
Richard Manley
Minnesota CIS
670 American Center Building
150 East Kellogg Blvd.
St. Paul, MN 55101
(612) 296-2900

An additional source of information on developing Career Information Systems is the National Occupational Information Coordinating Committee. This organization has recently funded a number of states for the purpose of developing state-wide career information systems.

To contact National Occupational Information Coordinating Committee, write or call:

Mr. Russell Flanders
Executive Director
National Occupational Information
Coordinating Committee
801 Riviere Building
1832 M. Street N.W.
Washington, D.C. 20202

Telephone No.: (202) 653-7000

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MEMBERSHIP LIST

FULL MEMBERSHIP

Mr. Elton Chase
Washington Occupational Information Service
Evergreen State College
Olympia, Washington 98505
(206) 866-6740

Ms. Deborah A. Gorman-Lindberg
Ohio Career Information System
Ohio Bureau of Employment Services
309 South Fourth Street
P.O. Box 1046
Columbus, Ohio 43215
(614) 466-8987

Dr. Roger Lambert
Wisconsin Career Information System
964 Educational Sciences Building
1025 West Johnson Street
Madison, Wisconsin 53706
(608) 263-2704

Dr. Bruce McKinlay, Director
Career Information System
247 Hendricks Hall
University of Oregon
Eugene, Oregon 97403
(503) 686-3872

Ms. Pauline A. Parish, Director
Colorado Career Information System
University of Colorado
Willard Administrative Center - Room 7
Boulder, Colorado 80309
(303) 492-8932

Ms. Deborah E. Perlmutter, Director
MetroGuide/NYC Board of Education
Room 711 - 110 Livingston Street
Brooklyn, New York 11201
(212) 596-5850

Mr. James Stubblefield
Director of User Services
EUREKA California Career Information System
Diablo Valley College
Pleasant Valley, California 94523
(415) 685-1230

Dr. Thomas A. Welch, Executive Director
Massachusetts Occupational Information System
13 Mercer Road
Natick, Massachusetts 01760
(617) 237-2942

Mr. Douglas S. Young
Minnesota Career Information Service
670 American Center Building
150 East Kellogg Blvd.
St. Paul, Minnesota 55101
(612) 296-6900

ASSOCIATE MEMBER

Mr. Tom Pedersen, Chief
Research & Statistics
Job Service North Dakota
Box 1537
Bismarck, North Dakota 58505
(701) 224-2868

SUPPORTING MEMBER

Ms. Linda L. Kobylarz, Manager
Information Systems
Time Share Corporation
630 Oakwood Avenue
West Hartford, Connecticut 06110
(203) 522-0136

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